The median follow-up was 8 months (0.8-54 months). The median OS for patients who received M-MUD was 8.1 months while it was 14.2 months for patients who received F-MRD (p=0.72) Fig1. Median DFS for patients who received M-MUD was 6 months while it was 7.2 months for patients who received F-MRD (p=0.94). The CI rates of aGVHD III-IV, extensive chronic GVHD, REL and NRM at 12 months in M-MUD vs F-MRD were 13% vs 16% (p=0.69), 21% vs 27% (p=0.61), 38% vs 44% (p=0.65), and 16% vs 14% (p=0.79), respectively. The CI of steroid refractory (SR) GVHD in M-MUD vs F-MRD was 24% vs 32% (The Hazard Ratio of SR GVHD in M-MUD vs F-MRD is 0.711 (95% confidence interval is 0.29-1.72, p=0.45)) Fig 2. Other variables considered in univariate analysis for SR GVHD were recipient age (p=0.55), disease status (p=0.64), MAC vs other regimens (p=0.58).

Conclusion: In this small cohort from a single center, we found that compared to M-MUD, F-MRD had a trend for higher rates of SR GVHD after peripheral blood allo-SCT in adult male patients, although not statistically significant. There was no impact of F-MRD compared to M-MUD on OS, DFS, REL, NRM or rates of acute or chronic GVHD. However, the absence of statistical impact should be interpreted with caution given the retrospective design of the study and because we cannot exclude a possible limiting effect of a small number of patients.

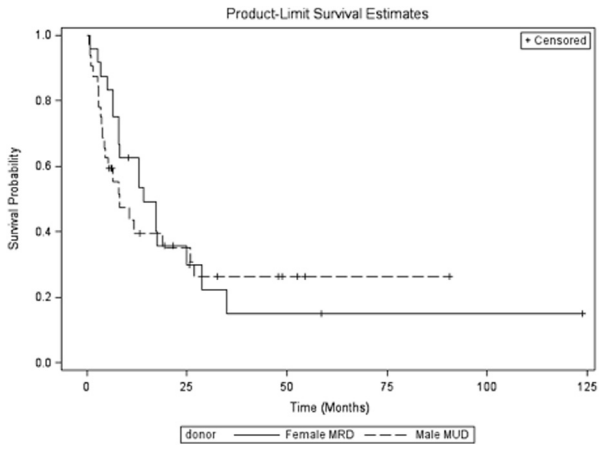

Figure 1.

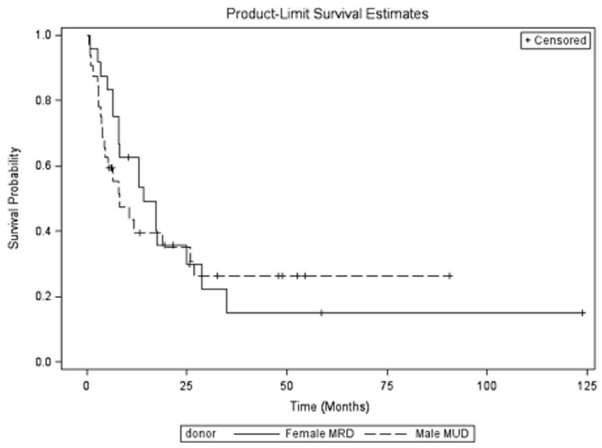

Figure 2.

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Ruxolitinib Prior to Allogeneic Stem Cell Transplant: The Experience at Mayo Clinic Arizona

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Background: Primary Myelofibrosis (PMF) and Post PV/ET MF are a group of myeloproliferative neoplasms that are characterized by marrow fibrosis, cytopenias, constitutional symptoms, and splenomegaly. Allogeneic stem cell transplant (ASCT) remains the only potential curative modality. The increased risk of morbidity and mortality warrants careful selection of candidates. Age, performance status (PS) and HCT-CI scores are all factors that may affect outcomes related to ASCT. Use of JAK inhibitor therapy prior to HCT may lead to reduction in splenomegaly, decrease in constitutional symptoms, and improved PS. We report our experience here at Mayo Clinic Arizona using JAK inhibition prior to ASCT.

Methods: We conducted a retrospective review of all patients from 2011 to current with PMF or post ET/PV-MF who underwent treatment of ruxolitinib followed by ASCT. Patient demographic and transplant data were analyzed from a comprehensive database. The use of such data for reporting purpose was approved by the Mayo Clinic Arizona Institutional Review Board.

Results

Patient characteristics

Eight patients underwent ruxolitinib therapy prior to ASCT. Mean age was 61 yrs.

Disease characteristic

DIPSS risk was high risk in 6 and intermediate 2 in 2. The JAK 2 v617 mutation was present in 7 patients. Four patients had PMF and 4 had post PV-MF. None of the patients underwent splenectomy. The median duration of ruxolitinib was 7.8 months. Improvement in PS was seen 4 pts, stable PS was seen 3 patients and data regarding PS was missing in 1. Six of the 8 patients had reduction in their spleen size prior to ASCT. The median daily dose of ruxolitinib was 25.6 mg/day.

Transplant characteristics

One patient underwent myeloablative conditioning (MAC), 5 reduce toxicity, and 2 RIC. All 8 patients had unrelated donors with 1 patient having a mismatch unrelated donor. Graft versus host disease prophylaxis was tacrolimus/methotrexate in 6 patients and tacrolimus/MMF in 2 patients. All 8 patients received in vivo T cell depletion with rabbit ATG and had peripheral stem cells as their graft source. Of the 8 patients, 1 had primary graft failure 2 had relapsed disease before day 100. All 3 of these patients were conditioned with Bu/Flu RIC regimen. None of the patients experienced tumor lysis syndrome or cardiogenic shock.

Conclusion: In our small cohort of patients that received ruxolitinib pre ASCT improvement in performance status and spleen size were seen. Our data is still immature to make any meaningful comments of outcomes, but all patients tolerated the ruxolitinib and no major adverse outcomes were seen related to the ruxolitinib such as cardiogenic shock or tumor

lysis syndrome as seen in a recent French study. Further studies are needed to formally evaluate the impact on JAK inhibitors on transplant both pre and post setting.

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Increased CD68+ Macrophages Are Associated with Liver Fibrosis in a Humanized Chronic Graft-Versus-Host Disease Mouse Model

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Introduction: Chronic Graft-versus-Host Disease (cGvHD) occurs in 40%-70% of allogeneic hematopoietic stem cell transplantation. Their quality of life is severely affected, and the two-year overall survival is about 60%. cGvHD displays autoimmune-like and fibrotic symptoms. B cell activation appears to be involved in this process, however, little is known about the role of the macrophage in cGvHD. Previously, we reported a humanized cGvHD model with lung fibrosis induced by G-CSF mobilized human PBMCs (G-hPBMCs) 8 weeks post transplantation. We further developed the model with liver fibrosis.

Materials and Methods: NSG mice were treated with 20mg/kg cyclophosphamide (CTX) at day -3 and -2 combined with 200cGy total body irradiation (TBI) at day -1. This was followed by injection of $1x10^6$ G-hPBMCs or $1x10^5$ $CD34^+$ cells at day 0. Engraftment was assessed in PB and in specific target organs by either flow cytometry or immunohistochemistry (IHC). Liver samples were taken 8 weeks post transplantation, and fixed and stained with hematoxylin and eosin and Masson's trichrome. The specimens were evaluated by a pathologist who was blinded to the treatment group. Serum was collected 8 weeks post transplantation and analysed for human cytokine/chemokine array.

Results: The percentage of $hCD45^+$ cells in PB showed a significant increase at 8 weeks compared to 4 weeks ($p=0.01$). Mice that received $1x10^6$ G-hPBMCs had $hCD45^+$ cells in PB at a median of 18.0% (1.6-79.4%), and comprised more than 95% of $hCD3^+$ T cells. Histology showed peri-portal and bile duct inflammation and fibrosis, with aggregation of $hCD68^+$ macrophages with lymphocytes **(Figure 1).** There was a correlation between liver pathology score and

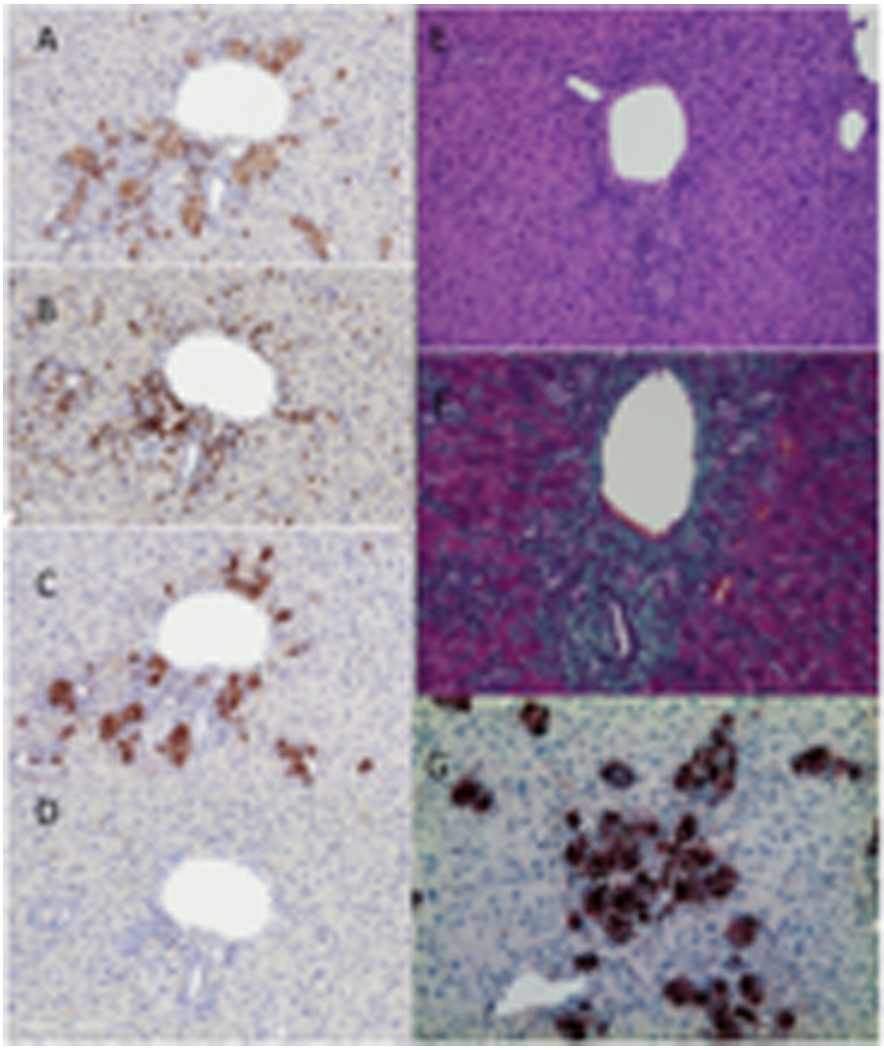

Figure.